AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. **(original):** A method for obtaining a disease-associated gene, wherein a disease-associated transcription factor is expressed in a cell line that is deficient in said transcription factor or in a primary cultured cell, and the gene the expression of which is thereby induced or inhibited is screened.

2. **(currently amended):** ~~A method for obtaining~~ The method according to claim 1, wherein the disease-associated gene is a Runx2/Cbfa1-related disease-associated gene, and wherein Runx2/Cbfa1 is expressed in a Runxs/Cbfa1-deficient chondrocyte cell line or in a Runx2/Cbfa1-deficient primary cultured cell, and the gene the expression of which is thereby induced or inhibited is screened.

3. **(currently amended):** ~~A method for obtaining~~ The method according to claim 2, wherein the Runx2/Cbfa1-related disease-associated gene is a gene associated with regulation of cartilage differentiation, and wherein Runx2/Cbfa1 is expressed in a Runx2/Cbfa1-deficient chondrocyte cell line or in a Runx2/Cbfa1-deficient primary cultured cell, and the gene the expression of which is thereby induced or inhibited is screened.

4. **(original):** The method according to any one of claims 1 to 3, wherein said screening is carried out via subtraction or DNA chip analysis.

5. **(original):** A primary chondrocyte or cultured chondrocyte derived from a Runx2/Cbfa1-deficient mouse.

6. **(original):** A chondrocyte derived from a Runx2/Cbfa1- and p53-deficient mouse.

7. **(original):** The chondrocyte cell line derived from the Runx2/Cbfa1- and p53-deficient mouse according to claim 6, which is the RU-1 cell line or the RU-22 cell line deposited under the accession number FERM BP-10137 or FERM BP-10138 at the International Patent Organism Depositary of the National Institute of Advanced Industrial Science and Technology.

8. **(canceled).**

9. **(original):** A polynucleotide having the nucleotide sequence shown in SEQ ID NO: 9.

10. - 14. (canceled).

15. (currently amended): A human homolog polynucleotide of the polynucleotide according to claim ~~8~~9, which has the nucleotide sequence shown in SEQ ID NO: ~~27, 29, 31, 33,~~ 35~~, 37, 39, 41, 43, 45, 47, 49, or 51~~.

16. (currently amended): A polynucleotide having 65% or more homology to the polypeptide encoded by the polynucleotide having the nucleotide sequence shown in SEQ ID NO: ~~1, 3, 5, 7,~~ 9 or ~~, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33,~~ 35, ~~37, 39, 41, 43, 45, 47, 49, or 51,~~ and encoding a protein capable of stimulating or inhibiting cartilage differentiation.

17. (currently amended): A polynucleotide being capable of hybridizing under stringent conditions to the polynucleotide having the nucleotide sequence shown in SEQ ID NO: ~~1, 3, 5, 7,~~ 9 or ~~, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33,~~ 35~~, 37, 39, 41, 43, 45, 47, 49, or 51~~ or a complementary strand thereof, and encoding a protein capable of stimulating or inhibiting cartilage differentiation.

18. (currently amended): A recombinant DNA vector comprising the polynucleotide according to any one of claims 9, 15, 16, and 17 ~~8 to 17~~ or a complementary strand thereof.

19. (original): A transformant transformed with the recombinant DNA vector according to claim 18.

20. (currently amended): A polypeptide comprising the amino acid sequence shown in SEQ ID NO: ~~2, 4, 6, 8,~~ 10~~, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, or 52~~.

21. (currently amended): A polypeptide comprising an amino acid sequence derived from the amino acid sequence shown in SEQ ID NO: ~~2, 4, 6, 8,~~ 10~~, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, or 52~~ by deletion, substitution, or addition of one or several amino acid residues, and capable of stimulating or inhibiting cartilage differentiation.

22. (currently amended): A polypeptide comprising an amino acid sequence having at least 65% homology to the amino acid sequence shown in SEQ ID NO: ~~2, 4, 6, 8,~~ 10~~, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, or 52~~, and capable of stimulating or inhibiting cartilage differentiation.

23. - 30. (canceled).

31. (currently amended): A pharmaceutical composition comprising the polynucleotide <u>having the nucleotide sequence shown in SEQ ID NO: 1, 3, 5, 9, 15, 25, 27, 29, 31, 35, 41, or 51, a polynucleotide having 65% or more homology to the polypeptide encoded by the nucleotide sequence shown in SEQ ID NO: 1, 3, 5, 9, 15, 25, 27, 29, 31, 35, 41, or 51 and</u>

encoding a protein capable of stimulating or inhibiting cartilage differentiation, or a polynucleotide being capable of hybridizing under stringent conditions to the nucleotide sequence shown in SEQ ID NO: 1, 3, 5, 9, 15, 25, 27, 29, 31, 35, 41, or 51 and encoding a protein capable of stimulating or inhibiting cartilage differentiation, ~~according to any one of claims 8 to 17~~ and a pharmaceutically acceptable carrier.

32. (currently amended): A method for preventing and/or treating a bone and/or joint disease comprising administering to a subject the polynucleotide ~~according to any one of claims 8 to 17~~having the nucleotide sequence shown in SEQ ID NO: 1, 3, 5, 9, 15, 25, 27, 29, 31, 35, 41, or 51, a polynucleotide having 65% or more homology to the polypeptide encoded by the nucleotide sequence shown in SEQ ID NO: 1, 3, 5, 9, 15, 25, 27, 29, 31, 35, 41, or 51 and encoding a protein capable of stimulating or inhibiting cartilage differentiation, or a polynucleotide being capable of hybridizing under stringent conditions to the nucleotide sequence shown in SEQ ID NO: 1, 3, 5, 9, 15, 25, 27, 29, 31, 35, 41, or 51 and encoding a protein capable of stimulating or inhibiting cartilage differentiation.

33. (previously presented): The method according to claim 32, wherein the bone and/or joint disease is osteoarthritis.

34. (currently amended): A method for diagnosing a disease comprising contacting a sample with the polynucleotide ~~according to any one of claims 8 to 17~~having the nucleotide

sequence shown in SEQ ID NO: 1, 3, 5, 9, 15, 25, 27, 29, 31, 35, 41, or 51, a polynucleotide having 65% or more homology to the polypeptide encoded by the nucleotide sequence shown in SEQ ID NO: 1, 3, 5, 9, 15, 25, 27, 29, 31, 35, 41, or 51 and encoding a protein capable of stimulating or inhibiting cartilage differentiation, or a polynucleotide being capable of hybridizing under stringent conditions to the nucleotide sequence shown in SEQ ID NO: 1, 3, 5, 9, 15, 25, 27, 29, 31, 35, 41, or 51 and encoding a protein capable of stimulating or inhibiting cartilage differentiation.

35. **(currently amended):** A method for diagnosing a bone and/or joint disease comprising contacting a sample with the polynucleotide ~~according to any one of claims 8 to 17~~having the nucleotide sequence shown in SEQ ID NO: 1, 3, 5, 9, 15, 25, 27, 29, 31, 35, 41, or 51, a polynucleotide having 65% or more homology to the polypeptide encoded by the nucleotide sequence shown in SEQ ID NO: 1, 3, 5, 9, 15, 25, 27, 29, 31, 35, 41, or 51 and encoding a protein capable of stimulating or inhibiting cartilage differentiation, or a polynucleotide being capable of hybridizing under stringent conditions to the nucleotide sequence shown in SEQ ID NO: 1, 3, 5, 9, 15, 25, 27, 29, 31, 35, 41, or 51 and encoding a protein capable of stimulating or inhibiting cartilage differentiation.

36. **(previously presented):** The method according to claim 35, wherein the bone and/or joint disease is osteoarthritis.

37. (currently amended): A transgenic animal model of a bone and/or joint disease, in which an expression level of the gene encoded by the polynucleotide ~~according to any one of claims 8 to 17~~ having the nucleotide sequence shown in SEQ ID NO: 1, 3, 5, 9, 15, 25, 27, 29, 31, 35, 41, or 51, a polynucleotide having 65% or more homology to the polypeptide encoded by the nucleotide sequence shown in SEQ ID NO: 1, 3, 5, 9, 15, 25, 27, 29, 31, 35, 41, or 51 and encoding a protein capable of stimulating or inhibiting cartilage differentiation, or a polynucleotide being capable of hybridizing under stringent conditions to the nucleotide sequence shown in SEQ ID NO: 1, 3, 5, 9, 15, 25, 27, 29, 31, 35, 41, or 51 and encoding a protein capable of stimulating or inhibiting cartilage differentiation is enhanced or lowered.

38. (currently amended): A transgenic mouse model of a bone and/or joint disease, in which the gene encoded by the polynucleotide ~~according to any one of claims 8 to 17~~ having the nucleotide sequence shown in SEQ ID NO: 1, 3, 5, 9, 15, 25, 27, 29, 31, 35, 41, or 51, a polynucleotide having 65% or more homology to the polypeptide encoded by the nucleotide sequence shown in SEQ ID NO: 1, 3, 5, 9, 15, 25, 27, 29, 31, 35, 41, or 51 and encoding a protein capable of stimulating or inhibiting cartilage differentiation, or a polynucleotide being capable of hybridizing under stringent conditions to the nucleotide sequence shown in SEQ ID NO: 1, 3, 5, 9, 15, 25, 27, 29, 31, 35, 41, or 51 and encoding a protein capable of stimulating or inhibiting cartilage differentiation is expressed with the use of a type II collagen promoter.

39. - 94. (canceled).